WHAT IS CLAIMED IS:

1. A data-compressing method, comprising steps of:

operating a first and a second data to take a difference between the values of said first and said second data;

encoding said difference into a first recovery data code having a bit number less than m when the absolute value of said difference is less than a first threshold;

encoding said difference into a second recovery data code having a bit number equal to m when the absolute value of said difference is no less than said first threshold but no greater than a second threshold; and

encoding said difference into a third recovery data code proportional to said difference when the absolute value of said difference is greater than said second threshold.

2. The data-compressing method according to claim 1 wherein said first and said second data represent luma values of two immediately adjacent pixels.
3. The data-compressing method according to claim 1 wherein said first and said second data represent chroma values of two immediately adjacent pixels.
4. The data-compressing method according to claim 1 wherein a bit number of said difference is equal to m, and a bit number of said third recovery data code is equal to m.
5. The data-compressing method according to claim 1 wherein said bit number of said first recovery data code varies with said difference.
6. The data-compressing method according to claim 1 wherein each of said first and said second recovery data code corresponding to said difference having the absolute value greater than zero but no greater than said second

threshold includes a tag bit representing the sign of said difference.

7. The data-compressing method according to claim 1 wherein said third recovery data code corresponds to a half of said difference.
8. The data-compressing method according to claim 1 wherein said first and said second recovery data codes are obtained according to a correlation table.
9. A data-compressing method, comprising steps of:

operating a first and a second data to take a difference between the values of said first and said second data;

encoding said difference into a first recovery data code having a bit number less than m when the absolute value of said difference is less than a first threshold;

encoding said difference into a second recovery data code having a bit number equal to m when the absolute value of said difference is no less than said first threshold but no greater than a second threshold; and

encoding said second data into a third recovery data code when the absolute value of said difference is greater than said second threshold.

10. The data-compressing method according to claim 9 wherein said first and said second data represent luma values of two immediately adjacent pixels.
11. The data-compressing method according to claim 9 wherein said first and said second data represent chroma values of two immediately adjacent pixels.
12. The data-compressing method according to claim 9 wherein said bit number of said first recovery data code varies with said difference.
13. The data-compressing method according to claim 9 wherein each of said first and said second recovery data codes corresponding to said difference

having the absolute value greater than zero but no greater than said second threshold includes a tag bit representing the sign of said difference.

14. The data-compressing method according to claim 9 wherein each of said first and said second data and said difference has a bit number equal to m, and a bit number of said third recovery data code is equal to m.
15. The data-compressing method according to claim 9 wherein said third recovery data code includes a designated bit grafted to selected bits of said second data.
16. The data-compressing method according to claim 15 wherein said third recovery data code is obtained by truncating the end bit of said second data and grafting said designated bit as the leading bit of said second data.
17. The data-compressing method according to claim 9 wherein each of said first and said second recovery data codes has a characteristic bit different from a characteristic bit of said third recovery data code.
18. The data-compressing method according to claim 17 wherein said characteristic bit is the leading bit of each of said recovery data codes.
19. The data-compressing method according to claim 17 wherein said characteristic bit is "1" for each of said first and said second recovery data codes, and "0" for said third recovery data code.
20. A data-decompressing method for use with said data-compressing method according to claim 17, comprising steps of:

receiving a recovery data code;

checking said characteristic bit of said recovery data code to determine whether the absolute value of said difference is greater than said second threshold;

realizing said difference according to said recovery data code and a correlation table, and adding said difference to said first data to recover said second data when the absolute value of said difference is no greater than said second threshold; and

truncating the leading bit of said recovery data code and tagging an end bit to said recovery data code to recover said second data when the absolute value of said difference is greater than said second threshold.

21. A data-decompressing method for use with said data-compressing method according to claim 8, comprising steps of:

receiving a recovery data code;

determining whether said recovery data code is said first, said second or said third recovery data code;

realizing said difference according to said recovery data code and said correlation table when said recovery data code is said first or said second data code;

realizing said difference by proportionally operating said recovery data code when said recovery data code is said third data code; and

adding said difference to said first data to recover said second data.

22. A data compressing and decompressing device for use with an image pickup device and a frame buffer, comprises:

a first data register in communication with the image pickup device for storing therein a first and a second data outputted by the image pickup device;

a first encoder in communication with said first data register, operating said first and said second data to obtain a difference between values of said first and said second data; and

a second encoder in communication with said first encoder and said frame buffer, encoding said difference into a length-variable recovery data code in a first condition of said difference, encoding said difference into a first constant-length recovery data code in a second condition of said difference, and encoding said difference into a second constant-length recovery data code in a third condition of said difference.

23. The data compressing and decompressing device according to claim 22 wherein said first condition holds when said difference has the absolute value thereof less than a first threshold, said second condition holds when said difference has the absolute value thereof no less than said first threshold but no greater than a second threshold, and said third condition holds when said difference has the absolute value thereof greater than said second threshold.

24. The data compressing and decompressing device according to claim 22 wherein each of said first data, said second data and said difference has a bit number m.

25. The data compressing and decompressing device according to claim 24 wherein said length-variable recovery data code has a bit number less than m, and each of said first and said second constant-length recovery data code has a bit number equal to m.

26. The data compressing and decompressing device according to claim 22 wherein said second constant-length recovery data code is proportional to said difference.

27. The data compressing and decompressing device according to claim 26, further comprising:

a second data register storing therein said first data having been compressed and decompressed; and

a decoder in communication with said frame buffer and said second data register, decoding said length-variable and said first constant length into said difference according to a correlation table, and decoding said second constant length recovery data code by operating said second constant length recovery data code.

28. The data compressing and decompressing device according to claim 22 wherein said second constant-length recovery data code is proportional to said second data.

29. The data compressing and decompressing device according to claim 28, further comprising:

a second data register storing therein said first data having been compressed and decompressed; and

a decoder in communication with said frame buffer and said second data register, decoding said length-variable and said first constant length into said difference according to a correlation table, and decoding said second constant length recovery data code by operating said second data.

30. The data compressing and decompressing device according to claim 22 wherein said first encoder is a differential pulse encoding modulator.